

SHIP JAN 20, 2017

Work Order ID 154579

154579

Thursday, December 15, 2016 11:23:34 AM

Item ID: D209-669-013 Accept *N900040100* Setup Start *NS1*
Revision ID: Stop *NS2*
Item Name: AH-1F/P/S Skidtube LH with Standard Wearplates
Start Date: 12/19/2016 Start Qty: 1.00 *1* Cust Item ID:
Required Date: 1/5/2017 Req'd Qty: 1.00 *1* Customer:
Reference:

Approvals: Process Plan: US Date: 12/12/16 Tooling: _____ Date: _____ Run Start *NR1*
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr								
D209-669-013	Rev B (DEO)								
DSI 9450	Rev A								

DAS
6
9-89

JAN 03 2017

DAS
21
9-89

100	Document Control	0.00							
100	DOCUMENT CONTROL								
DC	Memo	0.00							
Doc.Control -USB or Paperwork	Photocopy bluefile & type labels per PPP d209-669-013 CHG004								

DAS
27
9-89

110	Pick Kit	0.00							
110									
Packaging	Memo	0.00							
Packaging									

JAN 09 2017

DAS
6
9-89

DAS
28
9-89

B155186

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		

Root Cause				FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐		
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐		
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐		
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____					
Misidentified ☐	Past Due ☐						

Work Order ID 154579

Thursday, December 15, 2016 11:23:34 AM

154579

Page 2

Item ID: D209-669-013

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: AH-1F/P/S Skidtube LH with Standard Wearplates

Start Date: 12/19/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/5/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC4- 100% Inspect kits for completeness

0.00

120

QC

Memo

0.01

Quality Control

DAS
27
9-89

JAN 23 2017

130

Packaging

0.00

130

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPPD209-669-013

Location: _____

Sold

DAS
27
9-89

JAN 23 2017

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.02

Quality Control

DAS
21
9-89

JAN 24 2017

MF
17-1-24

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification ☐	☐	Pressure/Forced ☐	☐	Temperature/Cure ☐	☐
Design ☐	☐	Operator ☐	☐	Bending ☐	☐	Set-up ☐	☐
Doc/Data ☐	☐	Offset/Setup ☐	☐	Centre Not Concentric ☐	☐	BOM/Route ☐	☐
Equip/Tooling ☐	☐	Supplier ☐	☐	Cracks ☐	☐	Broken/Damage/Defect ☐	☐
Handling/Pre ☐	☐	Training ☐	☐	Crimp/Kink/Ripple/Wave ☐	☐	Inspection Incomplete/Unqualified ☐	☐
Material ☐	☐	Use for Testing ☐	☐	Cuffs ☐	☐	Contamination ☐	☐
Internal Transport ☐	☐	Poor Information ☐	☐	CruShing ☐	☐	Countersink ☐	☐
Tribal Knowledge ☐	☐	Rushing ☐	☐	Heat Treat ☐	☐	Cut Too Short ☐	☐
LOA ☐	☐	Product Improvement ☐	☐	Wave/Twist in Tube ☐	☐	Instructions Incomplete/Unclear ☐	☐
Substation ☐	☐	Process Improvement ☐	☐	Marks/Chatter ☐	☐	Drill Holes ☐	☐
Past Expiry Date ☐	☐	Manufacturing Process ☐	☐	OTHER : _____			
Misidentified ☐	☐	Past Due ☐	☐				

Picklist Print

Thursday, December 15, 2016 11:23:39 AM

Page 1

Work Order ID: 154579

154579

Parent Item: D209-669-013

D209-669-013

Parent Item Name: AH-1F/P/S Skidtube LH with Standard Wearplates

Start Date: 12/19/2016

Required Date: 1/5/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: New IPP 08.02.13 LL, verified by:DD
IPP Rev:B 08-05-20 chg QTY of D2570 DD verified by: IPP REV:C
12.06.07 ECN 12-599 DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D209-669-043 *D209-669-043* AH-1F/P/S Replacement Skidtube with Standard Wearplates, Fits LH or RH		Manufactured	No			110	Each	0.0000	1	1			
D2917-1 *D2917-1* Saddle LH		Manufactured	No			110	Each	0.0000	2	2			
D2918-1 *D2918-1* Saddle LH		Manufactured	No			110	Each	1.0000	2	2			
AN4-51A *AN4-51A* Bolt		Purchased	No			110	Each	132.0000	8	8			
Location Loc Qty Loc Code													
ST406 1													
141669 1													
FG 5													
122993 5													
over003 50													
m136301 50													
over004 24													
m135158 24													
ST340 53													
m135706 3													
m135766 50													

DAS
28
9-89

DAS
6
9-89

DAS
6
9-89

DAS
28
9-89

DAS
6
9-89

JAN 10 2017

JAN 20 2017

JAN 20 2017

B155186

154583

154584

8

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By
7-101 8-101 13-101 14-101 15-101 16-101 17-101 18-101 19-101 20-101 21-101 22-101 23-101 24-101 25-101 26-101 27-101 28-101 29-101 30-101 31-101 32-101 33-101 34-101 35-101 36-101 37-101 38-101 39-101 40-101 41-101 42-101 43-101 44-101 45-101 46-101 47-101 48-101 49-101 50-101 51-101 52-101 53-101 54-101 55-101 56-101 57-101 58-101 59-101 60-101 61-101 62-101 63-101 64-101 65-101 66-101 67-101 68-101 69-101 70-101 71-101 72-101 73-101 74-101 75-101 76-101 77-101 78-101 79-101 80-101 81-101 82-101 83-101 84-101 85-101 86-101 87-101 88-101 89-101 90-101 91-101 92-101 93-101 94-101 95-101 96-101 97-101 98-101 99-101 100-101					Lead hand / Supervisor Approval Verification
					QC / QA Coordinator Approval
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____	

Picklist Print

Thursday, December 15, 2016 11:23:39 AM

Page 2

Work Order ID: 154579

154579

Parent Item: D209-669-013

D209-669-013

Parent Item Name: AH-1F/P/S Skidtube LH with Standard Wearplates

Start Date: 12/19/2016

Required Date: 1/5/2017

Start Qty: 1.00

Required Qty: 1.00

D2570 Manufactured No 110 Each 212.0000 24 24

D2570

Bushing

**

DAS
6
9-89

JAN 10 2017

DAS
28
9-89

Location Loc Qty Loc Code

FG	12	
88781	12	
FP001	31	
147395	16	
150641	15	
ST008	169	
145728	2	
148174	25	
150641	142	

24

MS21042L4

Purchased No

110 Each 2,530.000 24 24

MS21042L4

Nut

**

DAS
6
9-89

JAN 10 2017

DAS
28
9-89

Location Loc Qty Loc Code

FP001	18	
m133363	18	
GA	192	
m135058	192	
OVER007	1500	
m136182	500	
m136295	1000	
ST303	820	
m135864	320	
m135979	500	

24

Thursday, December 15, 2016 11:23:39 AM

Shop Packet Print

Page 2

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

Picklist Print

Thursday, December 15, 2016 11:23:39 AM

Work Order ID: 154579

154579

Parent Item: D209-669-013

D209-669-013

Parent Item Name: AH-1F/P/S Skidtube LH with Standard Wearplates

Start Date: 12/19/2016

Required Date: 1/5/2017

Start Qty: 1.00

Required Qty: 1.00

AN5-36A Purchased No

110 Each 126.0000 4 4

AN5-36A

Bolt

**

DAS 28 9-89

DAS 6 9-89

JAN 09 2017

DAS 27 9-89

Location	Loc Qty	Loc Code
over004	100	
M136150	100	
ST336	26	
M135774	26	

NAS1149D0563J Purchased No

110 Each 1,291.0000 8 8

NAS1149D0563J

Washer

**

DAS 6 9-89

DAS 28 9-89

JAN 09 2017

DAS 27 9-89

Location	Loc Qty	Loc Code
GA	681	
m136295	681	
ST263	610	
m135470	3	
m135774	607	

MS21042L5 Purchased No

110 Each 371.0000 4 4

MS21042L5

Nut

**

DAS 6 9-89

DAS 28 9-89

JAN 09 2017

DAS 27 9-89

Location	Loc Qty	Loc Code
GA	21	
m127813	21	
ST303	350	
m135297	2	
m135774	48	
m136047	200	
m136295	100	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐						OTHER : _____	

Picklist Print

Thursday, December 15, 2016 11:23:39 AM

Work Order ID: 154579

154579

Parent Item: D209-669-013

D209-669-013

Parent Item Name: AH-1F/P/S Skidtube LH with Standard Wearplates

Start Date: 12/19/2016

Required Date: 1/5/2017

Start Qty: 1.00

Required Qty: 1.00

AN4-7A Purchased No 110 Each 136.0000 16 16

AN4-7A

Bolt

**

DAS 6 28
9-89 JAN 09 2017 9-89

Location	Loc Qty	Loc Code
ST345	136	
m134249	3	
m134754	33	
m136192	100	

NAS1149D0463J Purchased No 110 Each 4,058.000 32 32

NAS1149D0463J

Washer

**

JAN 09 2017
DAS 6 28
9-89 9-89

Location	Loc Qty	Loc Code
GA	80	
M134508	13	
M135056	67	
ST260a	2200	
M136192	600	
M136263	600	
M136406	1000	
ST263	1778	
M135671	3	
M135948	175	
M136044	1600	

D2929 Manufactured No 110 Each 63.0000 2 2

D2929

Spacer

**

DAS 6 28
9-89 JAN 09 2017 9-89

Location	Loc Qty	Loc Code
Mezz	63	
53564	19	
84944	44	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____			

Picklist Print

Thursday, December 15, 2016 11:23:40 AM

Work Order ID: 154579

154579

Parent Item: D209-669-013

D209-669-013

Parent Item Name: AH-1F/P/S Skidtube LH with Standard Wearplates

Start Date: 12/19/2016

Required Date: 1/5/2017

Start Qty: 1.00

Required Qty: 1.00

D2930 Manufactured No

110 Each

14.0000

2

2

D2930

Spacer

**

DAS
6
9-89

JAN 09 2017

DAS
28
9-89

Location

Loc Qty

Loc Code

Mezz

14

53563

14

D3405-041 Manufactured No

110 Each

29.0000

1

1

D3405-041

Ground Handling Lug

**

DAS
6
9-89

JAN 09 2017

DAS
28
9-89

Location

Loc Qty

Loc Code

st529

19

147912

9

150833

10

ST546A

10

151325

10

AN4C47A Purchased No

110 Each

52.0000

4

4

AN4C47A

Bolt

**

DAS
6
9-89

JAN 09 2017

DAS
28
9-89

Location

Loc Qty

Loc Code

FG

10

122491

10

ST341

42

m135054

2

m135586

16

m136269

24

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Thursday, December 15, 2016 11:23:40 AM

Work Order ID: 154579

154579

Parent Item: D209-669-013

D209-669-013

Parent Item Name: AH-1F/P/S Skidtube LH with Standard Wearplates

Start Date: 12/19/2016

Required Date: 1/5/2017

Start Qty: 1.00

Required Qty: 1.00

MS21043-4

Purchased

No

110

Each

1,392.000

5

5

MS21043-4

Nut

**

DAS
6
9-89

JAN 09 2017
DAS
28
9-89

Location

Loc Qty

Loc Code

FG

40

104603

40

GA

17

m132803

17

OVER007

900

m136192

300

m136263

300

m136406

300

ST302

435

m135600

35

m136148

400

D3405-043

Manufactured

No

110

Each

44.0000

1

1

D3405-043

Ground Handling Lug

**

DAS
6
9-89

JAN 09 2017
DAS
28
9-89

Location

Loc Qty

Loc Code

st529

24

147906

2

148665

10

152065

12

ST546A

20

150832

10

151326

10

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Thursday, December 15, 2016 11:23:40 AM

Work Order ID: 154579

154579

Parent Item: D209-669-013

D209-669-013

Parent Item Name: AH-1F/P/S Skidtube LH with Standard Wearplates

Start Date: 12/19/2016

Required Date: 1/5/2017

Start Qty: 1.00

Required Qty: 1.00

D3407-041 Manufactured No

110 Each

14.0000

1 1

D3407-041

Tow Ring

**

JAN 09 2017

DAS 28
6
9-89

Location

Loc Qty

Loc Code

st530

14

151900

10

152812

4

D3456-1 Manufactured No

110 Each

88.0000

1 1

D3456-1

Washer

**

JAN 09 2017

DAS 28
6
9-89

Location

Loc Qty

Loc Code

FG

7

25701

7

ST037

31

151938

31

ST038A

50

152842

50

D3417-5 Manufactured No

110 Each

124.0000

2 2

D3417-5

Washer

**

JAN 09 2017

DAS 28
6
9-89

Location

Loc Qty

Loc Code

ST035

84

149255

3

152860

81

ST038A

40

151493

40

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D209-669 REV. B

INSTRUCTIONS:

1) FOR D209-669-011/-012/-013/-014 SKID TUBES @ CHANGE 003 AND SUBSEQUENT, MODIFY THE FOLLOWING:

- a) REPLACE THE D2968-041 TOW RING WITH THE D3407-041 TOW RING ASSEMBLY.
- b) REPLACE THE D2736-1 AND D2736-3 GHW LUGS WITH THE D3405-041 AND D3405-043 LUG ASSEMBLIES.
- c) AMEND THE PARTS LIST IN SECTION 5.0 OF INSTALLATION INSTRUCTIONS IIN-D209-669 REV. B AS SHOWN ON PAGE 2 OF THIS DSI.

NOTE: ALL INSTALLATION FASTENERS FOR THE ABOVE CHANGES HAVE BEEN UPDATED. SEE THE AMENDED PARTS LIST ON PAGE 2 FOR DETAILS.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 154879

VLC
162
14/12/18

20160203

54141227

A	NEW ISSUE	AJS	09.02.24
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9450	SHEET 1 OF 3
APPROVED		TITLE	SCALE
DE APPR.		SKIDTUBE INSTALLATIONS	NTS
DATE	09.02.24	COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Description Work Order Deviation				Disposition																																																													
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

5.0 PARTS LIST

ITEM	QTY -011	QTY -012	QTY -013	QTY -014	QTY -041	QTY -043	PART NUMBER	DESCRIPTION
	X						D209-669-011	SKIDTUBE INSTALLATION, LH (AH-1W/J)
		X					D209-669-012	SKIDTUBE INSTALLATION, RH (AH-1W/J)
			X				D209-669-013	SKIDTUBE INSTALLATION, LH (AH-1P/F/S)
				X			D209-669-014	SKIDTUBE INSTALLATION, RH (AH-1P/F/S)
	1	1			X		D209-669-041	REPLACEMENT SKIDTUBE (AH-1W/J)
			1	1		X	D209-669-043	REPLACEMENT SKIDTUBE (AH-1P/F/S)

IS:

50	4	4	1	1			D3405-041	LUG ASSEMBLY
51	8	8	4	4			AN4C47A	BOLT
52	16	16	8	8			D2570	BUSHING
53	8	8	4	4			MS21043-4	NUT
54			1	1			D3405-043	LUG ASSEMBLY
60	1	1	1	1			D3407-041	TOW RING ASSEMBLY
61	1	1	1	1			D3456-1	WASHER
62	1	1	1	1			MS21043-4	NUT
63	2	2	2	2			D3417-5	WASHER

WAS:

50	4	4	1	1			D2736-1	GHW LUG
51	8	8	4	4			AN4-46A	BOLT
52	16	16	8	8			D2570	BUSHING
53	8	8	4	4			MS21042L4	NUT (OR MS21042-4)
54			1	1			D2736-3	GHW LUG
60	1	1	1	1			D2968-041	TOW RING
61	1	1	1	1			AN970-4	WASHER
62	1	1	1	1			MS21042L4	NUT (OR MS21042-4)

DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9450	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		SKIDTUBE INSTALLATIONS	NTS
DATE	09.02.24	COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

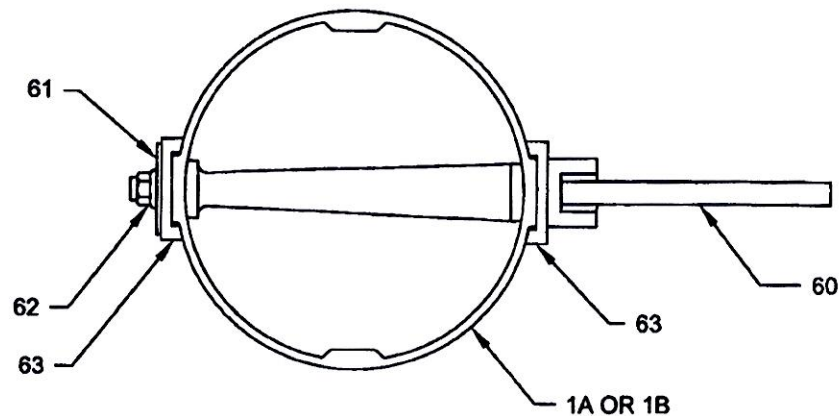
QA Closed: _____ Date: _____

Work Order update only ☐

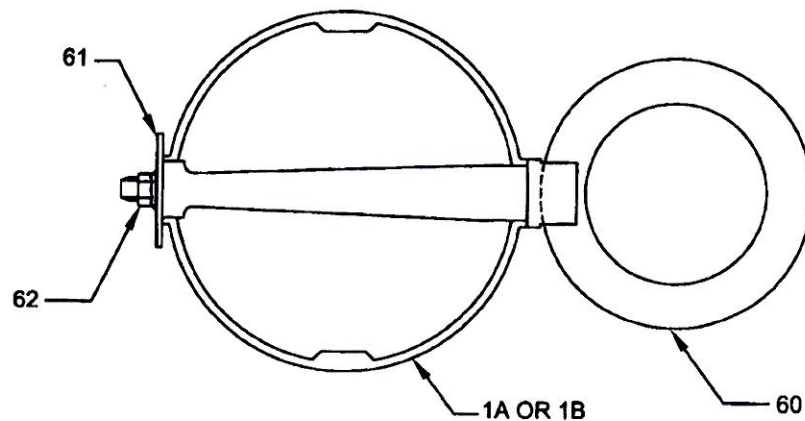
Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

INSTALL TOW RING ASSEMBLY AS SHOWN BELOW (REFER TO SECTION F-F OF IIN-D209-669 REV. B.

IS:



WAS:



NO PICTORIAL CHANGE REQUIRED FOR GROUND HANDLING WHEEL LUG CHANGES.

DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9450	SHEET 3 OF 3
APPROVED		TITLE	SCALE
DE APPR.		SKIDTUBE INSTALLATIONS	NTS
DATE	09.02.24	COPYRIGHT © 2009 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR IN CONNECTION WITH ANY COMMUNICATION TO ANY OTHER PERSON WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE LTD			

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

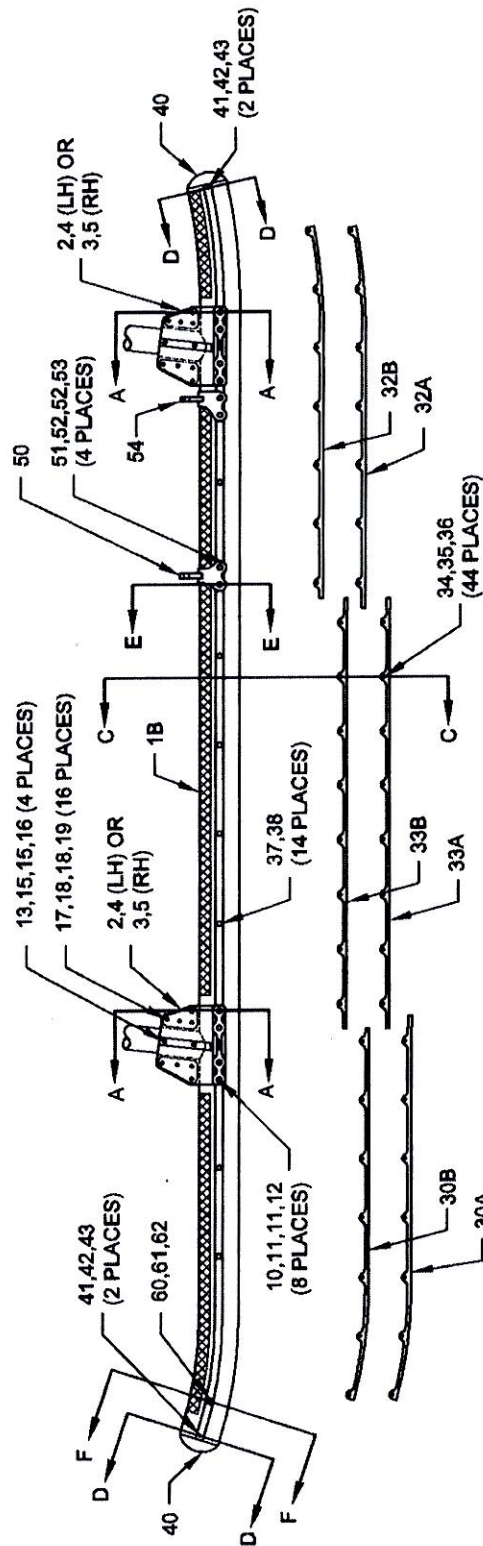


Figure 3 – D209-669-013/-014 Skidtube Installation (AH-1F/P/S)

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐
Past Expiry Date ☐	☐	Manufacturing Process	☐	OTHER : _____			
Misidentified ☐	☐	Past Due	☐				

4.0 WEIGHT AND BALANCE

The following weight and balance information is for the replacement Dart parts. The weight and balance of the skidtubes that are being removed from the aircraft is the responsibility of the installer.

Installation	Weight	LONGITUDINAL	
		Arm	Moment
D209-669-011/-012	49.6 lb	170.4 in	8452 in lb
SKIDTUBE INSTALLATION	22.5 kg	4.33 m	97.4 m kg
D209-669-013/-014	43.8 lb	176.5 in	7731 in lb
SKIDTUBE INSTALLATION	19.9 kg	4.48 m	89.2 m kg

5.0 PARTS LIST

Item	Qty -011	Qty -012	Qty -013	Qty -014	Qty -041	Qty -043	Part Number	Description
	X						D209-669-011	SKIDTUBE INSTALLATION, LH (AH-1W/J)
		X					D209-669-012	SKIDTUBE INSTALLATION, RH (AH-1W/J)
			X				D209-669-013	SKIDTUBE INSTALLATION, LH (AH-1P/F/S)
				X			D209-669-014	SKIDTUBE INSTALLATION, RH (AH-1P/F/S)
	1	1			X		D209-669-041	REPLACEMENT SKIDTUBE (AH-1W/J)
			1	1		X	D209-669-043	REPLACEMENT SKIDTUBE (AH-1P/F/S)
1A					1		D2906-041	SKIDTUBE ASSEMBLY
1B						1	D2906-043	SKIDTUBE ASSEMBLY
2	1		2				D2917-1	OUTER SADDLE (FWD, LH)
3		1		2			D2917-2	OUTER SADDLE (FWD, RH)
4	1		2				D2918-1	INNER SADDLE (FWD, LH)
5		1		2			D2918-2	INNER SADDLE (FWD, RH)
6	1						D2919-1	OUTER SADDLE (AFT, LH)
7		1					D2919-2	OUTER SADDLE (AFT, RH)
8	1						D2920-1	INNER SADDLE (AFT, LH)
9		1					D2920-2	INNER SADDLE (AFT, RH)
10	8	8	8	8			AN4-51A	BOLT
11	16	16	16	16			D2570	BUSHINGS
12	8	8	8	8			MS21042L4	NUT (OR MS21042-4)
13	2	2	4	4			AN5-36A	BOLT
14	2	2					AN5-41A	BOLT
15	8	8	8	8			AN960JD516	WASHER
16	4	4	4	4			MS21042L5	NUT (OR MS21042-5)
17	16	16	16	16			AN4-7A	BOLT
18	32	32	32	32			AN960JD416	WASHER
19	16	16	16	16			MS21042L4	NUT (OR MS21042-4)

CONTINUED ON NEXT PAGE

• COPYRIGHT © 2004 BY DART AEROSPACE LTD. •

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

Revision: **B**

Date: 07.08.23

REFERENCE ONLY

5.0 PARTS LIST

ITEM	QTY -011	QTY -012	QTY -013	QTY -014	QTY -041	QTY -043	PART NUMBER	DESCRIPTION
	X						D209-669-011	SKIDTUBE INSTALLATION, LH (AH-1W/J)
		X					D209-669-012	SKIDTUBE INSTALLATION, RH (AH-1W/J)
			X				D209-669-013	SKIDTUBE INSTALLATION, LH (AH-1P/F/S)
				X			D209-669-014	SKIDTUBE INSTALLATION, RH (AH-1P/F/S)
	1	1			X		D209-669-041	REPLACEMENT SKIDTUBE (AH-1W/J)
			1	1		X	D209-669-043	REPLACEMENT SKIDTUBE (AH-1P/F/S)

IS:

50	4	4	1	1			D3405-041	LUG ASSEMBLY
51	8	8	4	4			AN4C47A	BOLT
52	16	16	8	8			D2570	BUSHING
53	8	8	4	4			MS21043-4	NUT
54			1	1			D3405-043	LUG ASSEMBLY
60	1	1	1	1			D3407-041	TOW RING ASSEMBLY
61	1	1	1	1			D3456-1	WASHER
62	1	1	1	1			MS21043-4	NUT
63	2	2	2	2			D3417-5	WASHER

WAS:

50	4	4	1	1			D2736-1	GHW LUG
51	8	8	4	4			AN4-46A	BOLT
52	16	16	8	8			D2570	BUSHING
53	8	8	4	4			MS21042L4	NUT (OR MS21042-4)
54			1	1			D2736-3	GHW LUG
60	1	1	1	1			D2968-041	TOW RING
61	1	1	1	1			AN970-4	WASHER
62	1	1	1	1			MS21042L4	NUT (OR MS21042-4)

DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9450	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		SKIDTUBE INSTALLATIONS	NTS
DATE	09.02.24	COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

CONTINUED FROM PREVIOUS PAGE

20	2	2	2	2			D2929	SPACER
21	2	2	2	2			D2930	SPACER
*30A					1	1	D3564-9	WEARSHOE (REPLACES D2577-1)
*30B					1	1	D3566-1	GASKET
*31A					1		D3564-15	WEARSHOE (REPLACES 18" D2577-5)
*31B					1		D3566-15	GASKET
*32A					1	1	D3564-11	WEARSHOE (REPLACES D2577-3)
*32B					1	1	D3566-1	GASKET
*33A					1	1	D3564-5	WEARSHOE (REPLACES D2577-5)
*33B					1	1	D3566-5	GASKET
*34					50	44	AN3C4A	BOLT (REPLACES AN3-4A)
*35					50	44	AN960C10L	WASHER (REPLACES AN960JD10L)
*36					50	44	AKS7-1032-130	INSERT (OR ALS7-1032-130, OR ALS4-1032-130, OR AKS4-1032-130)
*37					12	14	D2594-1	PLUG
*38					12	14	D2594-3	O-RING
*40					2	2	D2855	AFT CAP
*41					4	4	AN3-5A	BOLT
*42					4	4	AN960JD10L	WASHER
*43					4	4	AKS7-1032-225	INSERT (OR ALS7-1032-225, OR ALS4-1032-225, OR AKS4-1032-225)
50	4	4	1	1			D2736-1	GHW LUG
51	8	8	4	4			AN4-46A	BOLT
52	16	16	8	8			D2570	BUSHING
53	8	8	4	4			MS21042L4	NUT (OR MS21042-4)
54			1	1			D2736-3	LUG ASSEMBLY
60	1	1	1	1			D2968-041	TOW RING
61	1	1	1	1			AN970-4	WASHER
62	1	1	1	1			MS21042L4	NUT (OR MS21042-4)

* DENOTES THAT PART IS INCLUDED WITH D2906-041/-043 SKIDTUBE ASSEMBLY

• COPYRIGHT © 2004 BY DART AEROSPACE LTD. •

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

Revision: B

Date: 07.08.23